SYSTEM AND METHOD FOR EXECUTING CONDITIONAL BRANCH INSTRUCTIONS IN A DATA PROCESSOR

ABSTRACT OF THE DISCLOSURE

There is disclosed a data processor having a clustered architecture that comprises at least one branching cluster, at least one non-branching cluster and remote conditional branching control circuitry. Each of the clusters is capable of computing branch conditions, though only the branching cluster is operable to perform branch address computations. The remote conditional branching control circuitry, which is associated with each of the clusters, is operable in response to sensing a conditional branch instruction in a non-branching cluster to (i) cause the branching cluster to compute a branch address and a next program counter address, (ii) cause the non-branching cluster to compute a branch condition, and (iii) communicate the computed branch condition from the non-branching cluster to the branching cluster. The data processor then uses the computed branch condition to select one of the branch address or the next program counter address.